

DOCKET NO.: 133816.01101

PATENT

IN THE CLAIMS:

The listing of claims will replace all prior versions, and listings of the claims in the application.

1-16. (Canceled)

17. (Currently Amended) A method for stimulating angiogenesis in a subject who has an muscle injury, comprising the step of:

injecting into muscle tissue of the injured muscle of the subject an isolated nucleic acid expression construct; wherein the muscle tissue comprises cells; and

the isolated nucleic acid expression construct comprises:

a myogenic promoter;

a nucleic acid sequence encoding an insulin-like growth factor I ("IGF-I") or functional biological equivalent thereof, wherein the functional biological equivalent has an amino acid sequence that is at least 55% identical to SEQ ID No.:4 and retains the biological function of stimulating angiogenesis in muscle tissue; and

a 3' untranslated region (3'UTR);

wherein the isolated nucleic acid expression construct is substantially free from a viral backbone; and

the myogenic promoter, the nucleic acid sequence encoding IGF I, and the 3'UTR are operably linked; whereby cells of the muscle tissue of the injured muscle of the subject take up the isolated nucleic acid expression construct and IGF-1 or functional biological equivalent thereof is expressed, and angiogenesis is stimulated in the muscle tissue of the injured muscle of the subject.

18. - 20. (Canceled)

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21. (Currently Amended) The method of claim 17, wherein the 3'UTR comprises a nucleic acid sequence that is at least 85% identical to SEQ ID No.: 5 from a skeletal alpha actin gene, or at least 85% identical to SEQ ID No.: 6 from a human growth hormone gene, and retains 3'UTR activity.

22. (Previously Presented) The method of claim 17, further comprising: mixing the isolated nucleic acid expression construct with a transfection-facilitating system before delivering the isolated nucleic acid expression construct into the muscle tissue of the injured muscle of the subject.

23. (Previously Presented) The method of claim 22, wherein the transfection-facilitating system is a liposome, or a cationic lipid.

24. (Currently Amended) The method of claim 17, wherein the isolated nucleic acid expression construct comprises a nucleic acid sequence that is at least 90% identical to SEQ ID NO.:1, and encodes encoding IGF-I or a functional biological equivalent thereof that has comprising an amino acid sequence of that is at least 85% identical to SEQ ID NO.:4 and retains the function of inducing angiogenesis in muscle tissue.

25. (Canceled)

26. (Previously Presented) The method of claim 17, wherein the isolated nucleic acid expression construct comprises Seq. ID NO.:1.

27. (Canceled)

28. (Original) The method of claim 27, wherein the transfection-facilitating polypeptide comprises a charged polypeptide.

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29. (Original) The method of claim 27, wherein the transfection-facilitating polypeptide comprises poly-L-glutamate.

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30. (Cancelled).

31. (Original) The method of claim 17, wherein the nucleic acid expression construct is delivered into the tissue of the subject via a single administration.

32. (Cancelled).

33. (Original) The method of claim 17, wherein the cells of the tissue are diploid cells.

34. - 37. (Cancelled).

38. (Original) The method of claim 17, wherein the subject is a human, a pet animal, a farm animal, a food animal, or a work animal.

39. - 40. (Cancelled).

41. (Currently Amended) The method of claim 17, wherein the myogenic promoter comprises SEQ ID No.: 3.

42. (Previously Presented) The method of claim 17, wherein the 3'UTR comprises SEQ ID No.: 5 or SEQ ID No.: 6.

43. (Currently Amended) The method of claim 4917, further comprising the step of: electroporating the muscle tissue of the injured muscle after the nucleic acid expression construct has been delivered into the muscle tissue of the injured muscle of the subject.

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44. (Currently Amended) The method of claim 2024, further comprising the step of: electroporating the muscle tissue of the injured muscle after the nucleic acid expression construct has been delivered into the muscle tissue of the injured muscle of the subject.